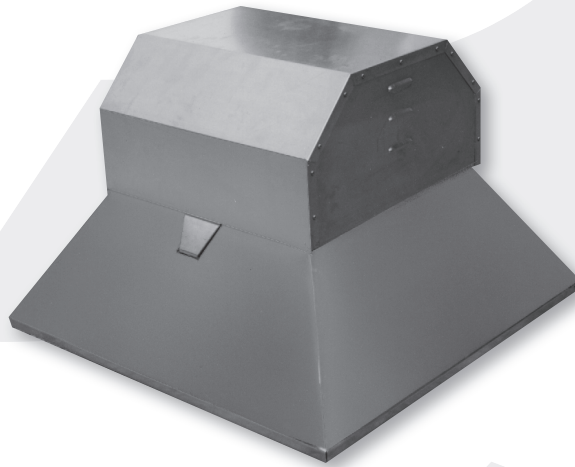




Bulletin LVQ08



LVQ DYNAFAN

Model: HA
Lockable, Vandal Resistant
Centrifugal Roof Exhausters
Direct and Belt Drive

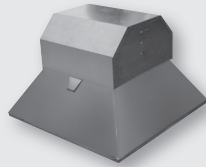
MOVING YOUR WAY

› **LVQ Dynafan Direct Drive Series**

- Static pressure up to 1.25 in. wg.
- Flow capacity up to 2,752 CFM

› **LVQ Dynafan Belt Drive Series**

- Static pressure up to 1.125 in. wg.
- Flow capacity up to 7,381 CFM



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Motor Availability 5

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Belt Drive Dimensional & Performance Data 8

Engineering Specifications 15

Limited Warranty IBC

› **UL and CSA Certification**

LVQ Dynafans carry the UL label, UL 705, (ZACT), File #E28413.



LVQ Dynafan exhausters are also certified by the Canadian Standard Association (File #LR13309).



PennBarry reserves the right to make changes at any time, without notice, to models, construction, specifications, options, availability, etc. This bulletin illustrates the appearance of PennBarry products at the time of publication. To view the latest updates, visit PennBarry at www.pennbarry.com.

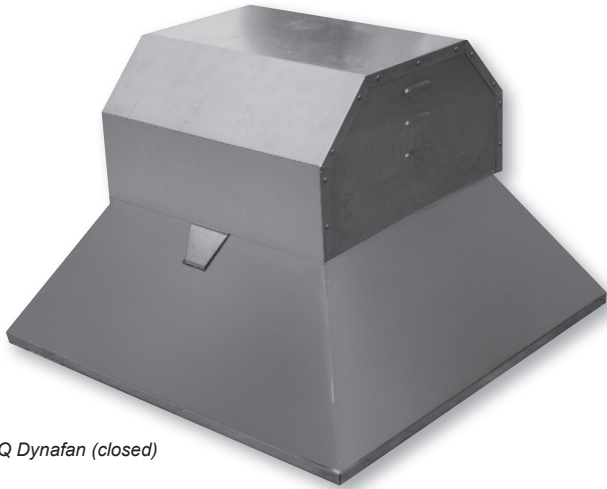
Introduction

LVQ Dynafan Centrifugal Fans



Introduction

Centrifugal Fans



LVQ Dynafan (closed)



LVQ Dynafan (open)

› LVQ Dynafan

LVQ Dynafan centrifugal fans are designed for roof-mounted installations where a lockable, vandal-resistant unit is required in low to medium pressure applications.

LVQ Dynafans are ideal for general purpose exhaust applications including: bathrooms, garages, general kitchen areas, offices, churches, dormitories, factories, large warehouses and other relatively clean air applications.

They feature a weather-resistant heavy-gauge housing which works in conjunction with patented wheel designs and deeply spun inlets to provide smooth quiet air flow through the ventilator. The centrifugal wheels are aluminum, nonoverloading, backward inclined, robotically welded, and dynamically balanced. All models have been rigorously tested in our state-of-the-art R&D lab.

› LVQ Dynafan Direct Drive Series

- Static pressure up to 1.25 in. wg.
- Flow capacity up to 2,752 CFM

› LVQ Dynafan Belt Drive Series

- Static pressure up to 1.125 in. wg.
- Flow capacity up to 7,381 CFM

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› Motor Selection

Both direct drive and belt drive models are available with a wide range of voltages and enclosures. (See Motor Selection section for a complete listing). Standard belt drive Open Drip Proof (ODP) ball bearing motors are selected using a conservative portion of the NEMA service factor. Standard direct drive ODP motors have Class B insulation and internal overload protection. Each size is carefully engineered to match the motor to the wheel capacity.

› Internal Wiring

All direct and belt drive models with ODP motors feature a polarized disconnect plug which is factory wired from the motor to the junction box. This provides a positive method of electric shut-off as required by most codes without requiring the traditional disconnect switch. (See Options & Accessories for optional Nema wiring and disconnect devices.)

› Curb Caps (Base)

Curb caps for direct drive and belt drive models are galvanized steel. All curb caps have fully welded corners and are pre-punched to ensure both a leak-tight and easy installation.

› Forced Motor Cooling

Louvers in the motor hood enable fresh air to be drawn into the motor housing during fan operation. This positive cooling promotes longer life for motor and drive components.

› Solid Steel Shafts

Sized so the first critical speed is a minimum of 130% of maximum cataloged operating speed, shafts are precision ground, and polished.

› Self-Aligning Bearings

Heavy-duty bearings are sized for a minimum L50 life in excess of 200,000 hours of operation. 100% factory tested, they are designed for air handling applications.

› Lockable Motor Compartment

By removing the lock, the motor hood tilts back for complete access to all the drive components. When locked, the unit is vandal resistant.

› Drives and Belts

Pulleys are pre-set to the specified RPM. Cast iron variable pitch pulleys are adjustable, allowing for field balancing based on actual conditions. All pulleys are sized for at least 150% of the driven horsepower.

› Vibration Isolators

Multidirectional, rubber-in-shear vibration isolators mitigate residual vibration transmission from the unit to the building.

› Conduit

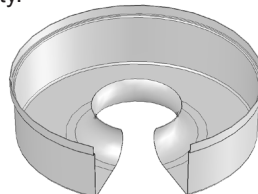
Both direct and belt drive units include a large 1" nominal conduit chase for easy installation of wiring from the motor hood to below the curb cap.

› Aluminum Bird Screen

Standard on all direct drive and belt drive models.

› Aluminum Wheels

LVQ Dynafans offer patented wheel designs. Carefully matched highly-tooled venturis enhance the performance of these backward inclined and non-overloading centrifugal wheels. Made of advanced alloys, the various wheel components provide superior strength and durability.



› Silent Wheel (Direct Drive)

- Blades' highly curved leading edge provide unsurpassed low sound numbers with excellent air performance.
- Backplate and inlet are stamped for consistency, plus dynamic balancing assure smooth vibration-free operation.
- Riveted or riveted and welded construction ensure superior dependability over other wheel designs.

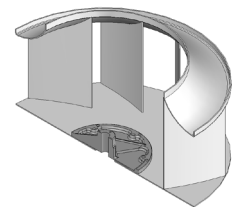
› Standard Duty, All Welded Wheel

(Standard Duty and High Pressure Belt Drive)

- Blades are curved for improved air performance while increasing their strength and rigidity.
- Wheel assembly is robotically welded to provide extremely durable and consistent performance.
- Wheel is dynamically balanced. Balancing weights are mechanically attached to the inside of the rims of both the backplate and wheel inlet. This allows a precise placement of the weights anywhere within a full 360° range on two separate planes, without the possibility of detachment.

› Reverse Venturi

Reverse venturi reduces turbulence and improves distribution of the air as it enters the wheel inlet and is "captured" by the blades.



Introduction

LVQ Dynafan Centrifugal Fans



Centrifugal Fans

Options & Accessories

› Finishes

Coatings such as Polyester Powder Coat, Epoxy Powder Coat, Phenolic Epoxy Powder Coat, and others are available. See the coatings brochure for details.

› Mounting Pedestal

The mounting pedestal incorporates a removable 12" high access panel for easy inspection and service of motor operated backdraft dampers.

› Aluminum Insect Screen

An aluminum screen with a smaller mesh than the standard bird screen is available.

› Backdraft Dampers

Backdraft dampers are available for either gravity or motorized operation (motor kit optional). Dampers feature square galvanized steel frame, multi-leaf, roll formed aluminum blades with nylon bearings.

› Anti-vandal Collars

Heavy-gauge structural steel angles are welded, hinged and lockable to limit access to mounting hardware to authorized personnel only.

› Burglar Bars

Curbs can be provided with built-in burglar bars. These 5/8" dia. bars are installed in a cross hatch pattern 6" on center. Can not be used with curb mounted backdraft damper. Damper must be installed in ductwork.

› Guards

Guards (by others) are highly recommended whenever a fan is mounted within seven feet of occupied space and/or otherwise unprotected with ductwork. Each application must be reviewed for OSHA compliance.

› Internal Wiring

NEMA 3R wiring is available for both direct drive and belt drive units.

› Safety Disconnect Switch

Safety disconnect switches are available to allow positive

electrical shut-off and safety. Switches are factory mounted when factory wiring is requested. Wiring is only run from the motor to the junction box. (Factory wiring of explosion proof applications is not available.) A wide range of Nema rated enclosures with disconnect switches are available for indoor, outdoor, and explosion proof installations. Disconnects are to be field wired by a licensed electrician.

› Firestat Switch

Firestat switch automatically disconnects the unit when the temperature of the air being exhausted exceeds a preset rating.

› Time-Delay Switch

(Direct drive models only.) The Airminder Model AM12 switch is a UL recognized and CSA certified time-delay relay that operates both the fan and room light to ventilate an area even after the occupants depart. In the "On" position, the Airminder turns the light and fan on immediately. In the "Off" position, the light goes off immediately and the fan is in operation for a period of time as preset from 1 to 60 minutes.

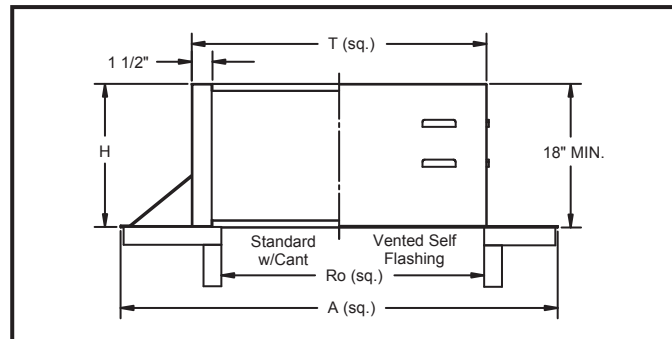
› Speed Controllers

The Lek-Trol™ controller allows adjustment in speed to a maximum of 50% reduction, which results in a very cost effective means for system balancing. The device can be located under the fan dome to prevent unauthorized tampering or on the wall for ease of operation by the building occupants. (Available on direct drive units with ODP motors and some select TE motors. See reference table under Motor Availability)

› Prefabricated Curb

A variety of sizes of prefabricated roof curbs is available. For a complete listing of all curb types and sizes available, please consult the latest PennBarry Curb Bulletin.

› LVQ Dynafan Curb Dimensional Drawings

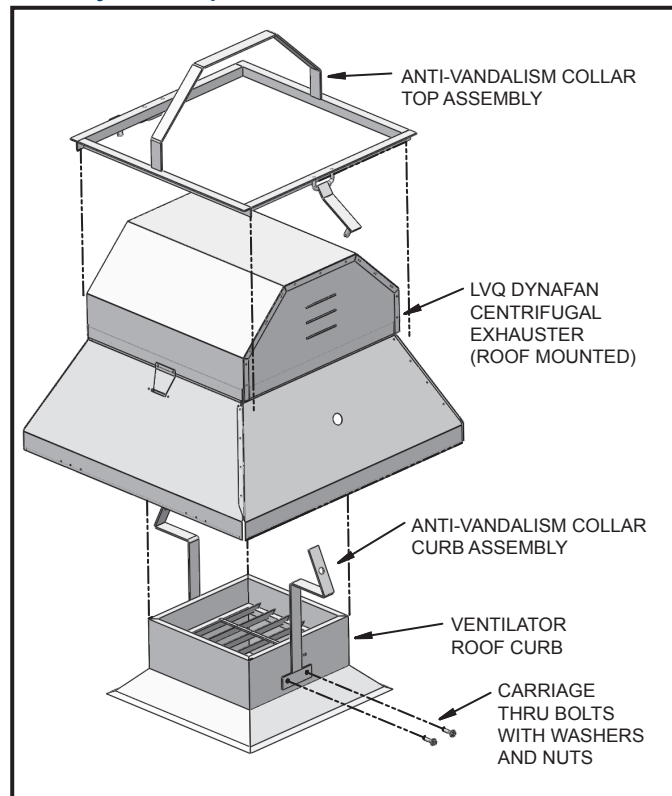


› LVQ Dynafan Dimensional References

Model	E SQ	T SQ	A SQ	Ro SQ	Damper Size SQ	Galv. Steel Gauge
HA08V/SC	18.5	17	25	9	8.75	18
HA10S/RC	18.5	17	25	11.5	11.25	18
HA11V/S/R/Q1C	18.5	17	25	11.5	11.25	18
HA13V/S/R/QC	18.5	17	25	11.5	11.25	18
HA16V/S/R/Q1/Q2C	20.5	19	27	16	15.75	18
HA06BC	18.5	17	25	11.5	11.25	18
HA11BC	20.5	19	27	16	15.75	18
HA12BC	24.75	23.25	31.25	16	15.75	18
HA16B/HA18BC	28.5	27	35	20	19.75	18
HA24BC	33.5	32	40	25	24.75	18

Standard heights "H" are 8", 12", and 18" including wood nailer. "T" dimension of curb is 1 1/2" less than the dimension of inside base of fan ("E"). "Ro" refers to Roof Opening. "E" dimension is inside base of fan.

› LVQ Dynafan Exploded View



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› Variable Speed Motor Control

PennBarry offers Lek-Trol™ solid state controllers to alter the high speed of most direct drive motors by as much as 50%. If variable speed is required, check the Lek-Trol™ availability table below to verify that controllers exist for the fan model selected. Remember, Lek-Trol™ controllers are currently only available for direct drive motors including all standard Open Drip Proof (ODP) 60 Hz motors. Not all totally enclosed motors are currently available with variable speed control. Inverter rated motors suitable for use with variable frequency drives can be supplied for belt drive models. Contact your local PennBarry representative for availability.

› Available Lek-Trol™ Speed Controls

Model	60 Hz					50 Hz		
	ODP	Totally Enclosed				Totally Enclosed		
	115V	115V	200V	208V	230V	110V	220V	240V
HA08V/SC	LT25	-	-	-	-	-	-	-
HA10S/RC	LT30	LT30	LT35	LT35	LT35	LT30	LT35	LT35
HA11V/S/RC	LT30	-	-	-	-	-	-	-
HA11Q1C	LT50	-	-	-	-	-	-	-
HA13V/S/RC	LT30	LT30	LT35	LT35	LT35	LT50	LT35	LT35
HA13QC	LT50	LT50	LT35	LT35	LT35	LT50	LT35	LT35
HA16V/S/RC	LT50	-	-	-	-	-	-	-
HA16Q1C	LT40	-	-	-	-	-	-	-
HA16Q2C	LT40	-	-	-	-	-	-	-

Lek-Trols™ indicated for multi-speed models (eg., HA16V/S/RC) are applicable only for the high speed. Do not use on low or medium speed for multi-speed models. Items noted with (-) are not applicable.

› Nema Motor

This chart summarizes the largest allowable Nema frame sizes for motors used on belt drive models.

› Largest Available Nema Frame Size per Model

Model	Max. Frame Size
HA06BC	42*
HA11BC	56
HA12BC	56
HA16BC	145T
HA18BC	145T
HA24BC	184T

! At PennBarry's option, large frame motors may be removed after testing and shipped separately. Contact the factory for special application motor availability. *Only available as 1/6 or 1/4 HP ODP, 115V.

› Direct Drive Motor Availability

The following chart lists the various motor options available for each of the direct drive fan models. Once a fan model is selected, this chart can be used to determine if a suitable motor is available. (If not, another selection may have to be made from the fan performance charts). Look under the nominal RPM heading to determine which fans have 2-speed and 3-speed motors.

› Direct Drive Motor Availability

Model	Nominal RPM				1 Phase						3 Phase			
	1050 V	1300 S	1550 R	1725 Q	115 Volts		200 - 240 Volts			200 - 460 Volts (2)				
					ODP	Totally Enclosed	ODP	Totally Enclosed	50 Hz	50 C Ambient	ODP	Totally Enclosed	50 Hz	50 C Ambient
HA08V/SC	x	x			yes	yes (1)	Use TE Motors	yes (1)	yes (1)	yes (1)	Use TE Motors	na	na	na
HA10S/RC		x	x		yes	yes (1)		yes (1)	yes (1)	yes (1)		na	na	na
HA11V/S/RC	x	x	x		yes	yes (1)		yes (1)	yes (1)	yes (1)		na	na	na
HA11Q1C				x	yes	yes		yes	yes	yes		na	na	na
HA13V/S/RC	x	x	x		yes	yes (1)		yes (1)	yes (1)	yes (1)		na	na	na
HA13QC				x	yes	yes		yes	yes	yes		yes	yes	yes
HA16V/S/RC	x	x	x		yes	yes (1)		yes (1)	yes (1)	yes (1)		na	na	na
HA16Q1C				x (3)	yes	na		na	na	na		na	na	na
HA16Q2C				x	yes	yes		yes	yes	yes		yes	yes	yes

(1) High speed only.; (2) 200 - 240, 380, 415, 460 V; (3) Nominal 1650 RPM.

Dimensional Information & Performance Data

Direct Drive | LVQ Dynafan Centrifugal Fans



Centrifugal Fans

HA08, HA, 10, HA11, HA13, & HA16

Performance Data Overview

LVQ Dynafan direct drive models are available with single and multi-speed motors. V (1050 RPM), S (1300 RPM), and R (1550 RPM) are multi-speed motors. Q (1725 RPM) is a single speed motor. A single LVQ Dynafan may be suitable for several requirements by a simple wiring change. This feature provides flexibility

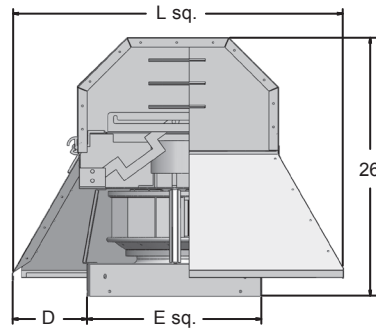
for a variety of reasons, including energy savings, off-hour requirements, future expansion, or unexpected field variations.

By using Lek-Trol™ variable speed controllers, the high speed flow rate of most models can be reduced by as much as 50%. Do not use on medium or low speed for multi-speed models.

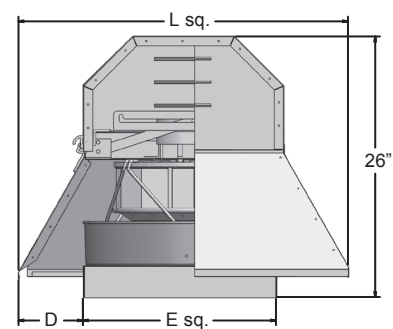
When compared to belt drive models, LVQ Dynafan direct drive fans require less maintenance, have a simpler construction, cost less, and are lighter in weight. LVQ Dynafan direct drive models are available in five sizes (8, 10, 11, 13 and 16). Capacities range from below 250 CFM to above 2750 CFM, with static pressures beyond 1 1/4".

HA08 - HA16 Direct Drive Fan Dimensional Data

Model	Material Gages		Dimensions				Est. Ship Wt.
	Galv. Base	Apron	L sq.	D	E*	Ro	
HA08VC/SC	16 ga.	0.050 in.	34 1/2	8	18 1/2	9	95 lbs
HA10SC/RC	16 ga.	0.050 in.	34 1/2	8	18 1/2	11 1/2	98 lbs
HA11VC/SC/RC	16 ga.	0.050 in.	34 1/2	8	18 1/2	11 1/2	107 lbs
HA11Q1C	16 ga.	0.050 in.	34 1/2	8	18 1/2	11 1/2	109 lbs
HA13VC/SC/RC	16 ga.	0.050 in.	34 1/2	8	18 1/2	11 1/2	105 lbs
HA13QC	16 ga.	0.050 in.	34 1/2	8	18 1/2	11 1/2	117 lbs
HA16VC/SC/RC, Q1C & Q2C	16 ga.	0.064 in.	34 1/2	7	20 1/2	16	125 lbs



Models HA08 - HA13



Model HA16

All dimensions are in inches.

*Outside dimension of curb should be 1/2" less than "E" dimension.

HA08 - HA16 Direct Drive Performance Data

Model	Nominal			Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP	
	HP	Max Watts	RPM		CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones
HA08VC	1/50	50	1050	2715	215	1.3	117	2.8	-	-	-	-	-	-
HA08SC	1/30	64	1300	3361	254	2.1	171	3.4	115	4.1	-	-	-	-
HA10SC	1/25	99	1300	3361	372	3.8	277	3.8	204	4.8	153	5.2	104	5.6
HA10RC	1/12	149	1550	4007	534	7	449	6.7	382	7.4	311	8.1	247	8.3
HA11VC	1/25	130	1050	3058	355	2.8	170	3.6	103	4.2	78	4.4	57	4.7
HA11SC	1/11	184	1300	3786	474	4.8	356	7.1	264	5.5	197	6	140	6.4
HA11RC	1/7	233	1550	4514	692	7.3	595	7.4	506	7.6	414	8.1	329	8.4
HA11Q1C	1/5	283	1650	4806	925	10.8	839	10.8	747	10.8	659	10.9	566	10.9
HA13VC	1/20	132	1050	3221	539	3.8	377	2.9	248	3.3	161	3.9	111	4.2
HA13SC	1/12	171	1300	3988	748	7.7	639	7.3	529	6.5	409	6.4	313	6.6
HA13RC	1/6	199	1550	4755	949	10.9	867	10.3	790	10	713	9.7	626	9.5
HA13QC	1/4	322	1725	5292	1262	15.1	1200	14.7	1145	14.3	1083	13.9	1022	13.4
HA16VC	1/6	479	1050	3788	1503	8.4	1230	6.1	988	5.5	777	6.1	657	6.9
HA16SC	1/3	515	1300	4690	1910	9.5	1663	8.5	1430	7.8	1220	7.4	1059	7.5
HA16RC	1/2	589	1550	5592	2288	13.9	2082	12.6	1871	11.5	1690	10.6	1505	9.9
HA16Q1C	1/2	713	1650	5953	2484	16.1	2350	15.4	2221	14.7	2092	14	1967	13.6
HA16Q2C	3/4	832	1725	6223	2752	18.3	2660	17.9	2571	17.5	2483	17.1	2395	16.8

Model	Nominal			Tip Speed FPM	0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP	
	HP	Max Watts	RPM		CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones
HA08VC	1/50	50	1050	2715	-	-	-	-	-	-	-	-	-	-
HA08SC	1/30	64	1300	3361	-	-	-	-	-	-	-	-	-	-
HA10SC	1/25	99	1300	3361	-	-	-	-	-	-	-	-	-	-
HA10RC	1/12	149	1550	4007	175	8.5	85	8.7	-	-	-	-	-	-
HA11VC	1/25	130	1050	3058	-	-	-	-	-	-	-	-	-	-
HA11SC	1/11	184	1300	3786	94	6.8	-	-	-	-	-	-	-	-
HA11RC	1/7	233	1550	4514	247	8.6	171	8.8	99	9	-	-	-	-
HA11Q1C	1/5	283	1650	4806	464	10.9	360	11	246	11.1	118	11.2	-	-
HA13VC	1/20	132	1050	3221	80	4.5	-	-	-	-	-	-	-	-
HA13SC	1/12	171	1300	3988	231	7	160	7.4	112	7.7	73	8	-	-
HA13RC	1/6	199	1550	4755	536	9.4	447	9.6	354	9.7	251	9.9	-	-
HA13QC	1/4	322	1725	5292	962	13	903	12.7	831	12.4	752	12	523	12
HA16VC	1/6	479	1050	3788	584	7.6	512	9.5	441	9.6	370	9.7	208	10.1
HA16SC	1/3	515	1300	4690	896	7.9	775	8.6	684	9.3	588	9.7	358	10.4
HA16RC	1/2	589	1550	5592	1325	9.3	1161	8.8	1008	9.1	874	9.4	592	9.4
HA16Q1C	1/2	713	1650	5953	1833	13.2	1703	12.8	1563	12.4	1408	12.3	1081	13.3
HA16Q2C	3/4	832	1725	6223	2297	16.4	2201	16.1	2107	15.8	1996	15.5	1753	15.5

Performance shown is for installation type A: free inlet, free outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are for loudness values in fan sonas at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for Installation Type A: free inlet fan sona levels. Performance ratings do not include the effects of appurtenances in the air stream. Performances in 50 Hz applications will be less than shown; consult with your local PennBarry representative.

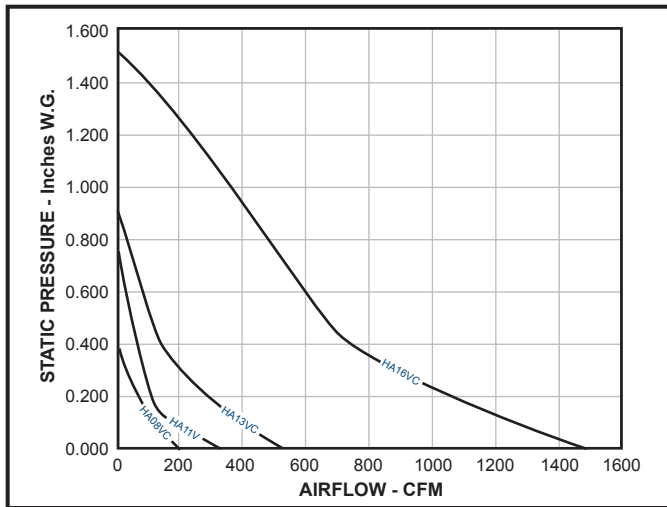
› Fan Curves

The fan curves illustrated here show the range of capacities available for direct drive units. Each graph shows the performance of several models at one particular nominal speed. Fan curves provide a quick method for selecting a fan unit based on design point requirements.

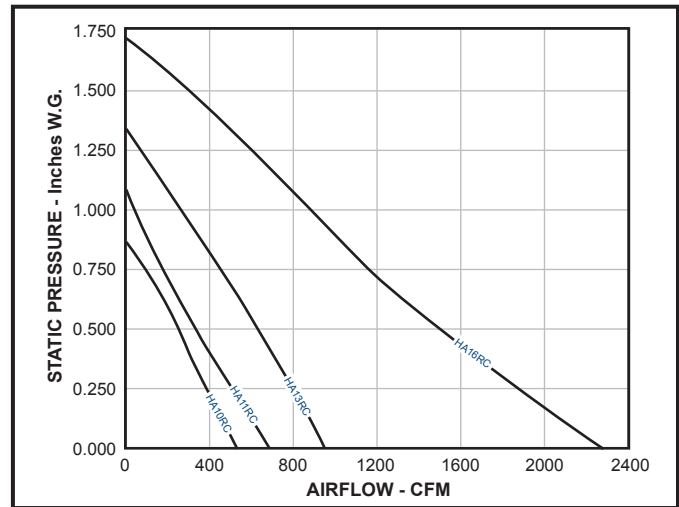
The direct drive performance chart on the previous page provides the tabular data (CFM and static pressure) used to plot the fan curves. In addition, the horsepower, tip speed and sones are tabulated. Since sound is normally an important factor in the selection of a fan, an engineer will usually want to select the “slowest” unit which meets CFM and SP requirements.

Please refer to the Motor Selection section to make sure the motor you select meets your electrical requirements.

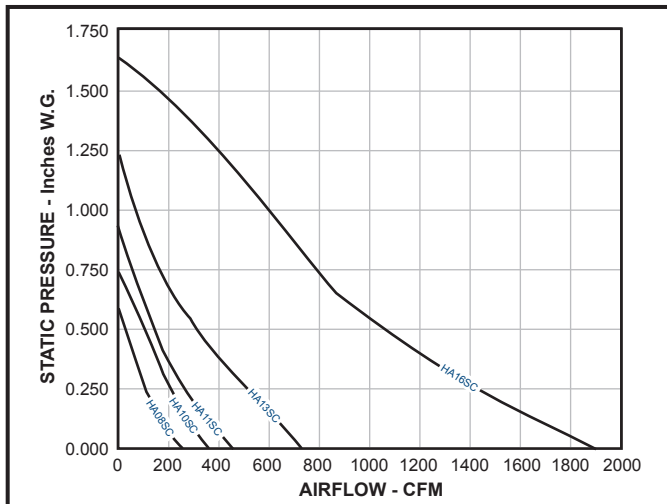
› Nominal 1050 RPM



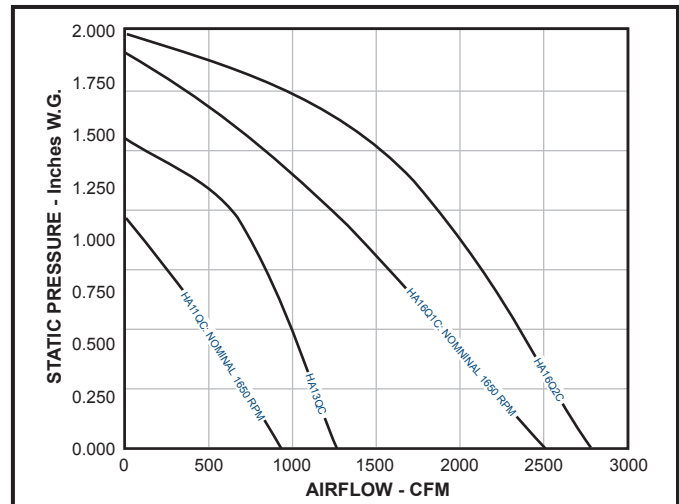
› Nominal 1550 RPM



› Nominal 1300 RPM



› Nominal 1725 RPM



LVQ Dynafans are only one component of a total system. As such, fan performance is directly affected by the system. It is critical that system designers determine the actual system loss to ensure that the actual flow is specified in the system design. Performance shown is for installation type A: free inlet, free outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances in the air stream.

Performance Data

Belt Drive | LVQ Dynafan Centrifugal Fans



Belt Drive Performance Data

Centrifugal Fans

› Performance Data

The belt drive models shown on the following pages have sizes and capacities ranging from below 250 CFM to above 7,350 CFM, with static pressures from 0" to above 1 1/8". All models, except the HA06BC, are available with a wide range of horsepower sizes and RPMs. Two-speed motors are commonly used to enhance this flexibility.

The data provided for each belt drive model includes:

- Elevation Drawing Showing Overall Dimensions
- Fan Curve Graph
- Performance Chart

Each curve graphically displays the range of capacities available for each model, in most cases beyond the specifics shown in the tabular data. The maximum performance afforded by each horsepower is indicated by dashed lines and the RPM is indicated by solid lines.

Some models have graphs that show both shaded and unshaded areas. Selection should be made from the unshaded area only. Shaded areas reflect unstable performance ("surge"), a characteristic typical of backward inclined wheels, and should be avoided. These unstable regions are not shown in the tabular data.

The highest RPM shown for a specific horsepower in the tabular data is the maximum speed that for any point along the performance curve, the BHP will not exceed the available horsepower.

It is important to note that while it is a common, industry-wide practice to exceed a "nominal" horsepower by using a motor's service factor, PennBarry uses a conservative portion of the service factor, allowing half to remain a true "safety" factor.

Use the Motor Availability chart (see Motor Selection) to select motor enclosures and voltages which can be installed in the fans.

Note: LVQ Dynafans are only one component of a total system. As such, performance is directly affected by the system. It is critical that system designers determine actual system losses to ensure that the actual flow is specified in the system range.

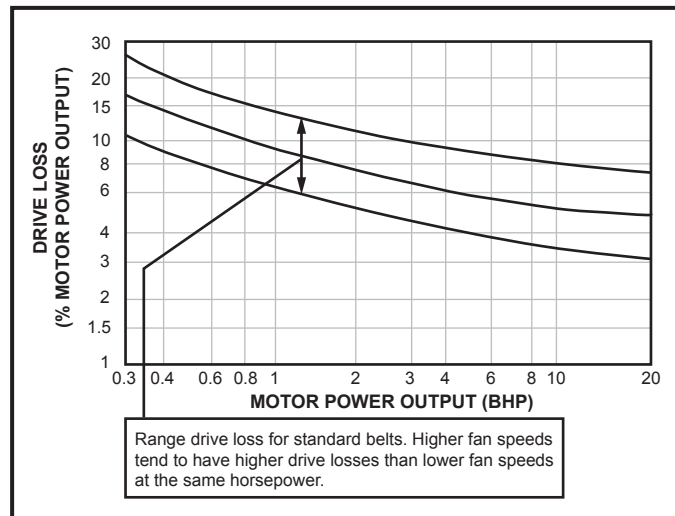
L
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› Belt Drive Losses

The AMCA Review Committee has developed the chart shown below for the purpose of estimating belt drive losses. To calculate total BHP (including drive losses): Find the BHP of your operating point on the x-axis on the graph below. Follow the vertical line to the curves indicating the range of drive losses. Look at the y-axis on the left and find the drive loss percentage. Calculate the total BHP by adding the drive loss to the operating point BHP. For BHP's below 0.3, use 30%.

› Drive Loss Reference Chart

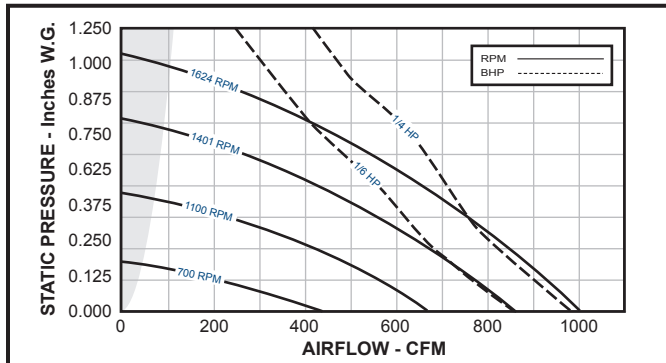


! For totally enclosed, explosion proof, multi-speed and all 1.0 Service Factor motors, fan BHP plus drive losses should not exceed motor rated HP.

Graph reprinted from AMCA publication 203, with the express written permission from the Air Movement and Control Association, Inc., 30 West University Drive, Arlington Heights, IL 60004-1983.

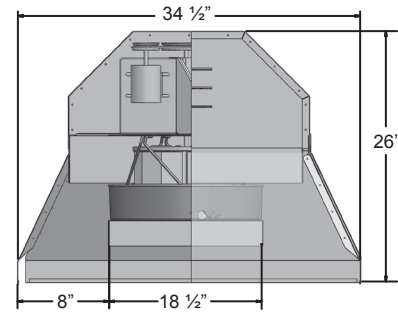
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› HA06BC Belt Drive Fan Curves



› HA06BC Belt Drive Fan Dimensional Data

- Galv. Steel Base = 16 ga.
- Galv. Motor Hood = 18 ga.
- Galv. Disch. Skirt = 18 ga.
- Roof Opening = 11 1/2" SQ.
- Damper Size = 11 1/4" SQ.
- Max. Motor Frame Size = 42
- Peak BHP = (RPM/2534)³
- Max. RPM = 1700 (1/4 HP)
- Est. Ship Weight = 104 lbs.



Centrifugal Fans

› HA06BC Belt Drive Fan Performance Data

HP	RPM	Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	
1/6	400	1165	246	-	-	-	-	-	-	-	-	-	-	-	-	-	
			1.4	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
	450	1311	277	-	-	-	-	-	-	-	-	-	-	-	-	-	
			1.9	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
	500	1456	308	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			2.1	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
	550	1602	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			2.5	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
	600	1748	369	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			2.8	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
	650	1893	400	151	-	-	-	-	-	-	-	-	-	-	-	-	-
			3.3	0.02	3.2	0.01	-	-	-	-	-	-	-	-	-	-	-
	700	2039	431	214	-	-	-	-	-	-	-	-	-	-	-	-	-
			3.8	0.02	3.7	0.01	-	-	-	-	-	-	-	-	-	-	-
	750	2184	462	268	-	-	-	-	-	-	-	-	-	-	-	-	-
			4.1	0.03	3.9	0.02	-	-	-	-	-	-	-	-	-	-	-
	800	2330	493	316	-	-	-	-	-	-	-	-	-	-	-	-	-
			4.5	0.03	4.3	0.03	-	-	-	-	-	-	-	-	-	-	-
850	2476	523	362	-	-	-	-	-	-	-	-	-	-	-	-	-	
		4.8	0.04	4.6	0.03	-	-	-	-	-	-	-	-	-	-	-	
900	2621	554	406	187	-	-	-	-	-	-	-	-	-	-	-	-	
		5.1	0.04	4.9	0.04	4.8	0.03	-	-	-	-	-	-	-	-	-	
950	2767	585	445	253	-	-	-	-	-	-	-	-	-	-	-	-	
		5.5	0.05	5.3	0.05	5.2	0.03	-	-	-	-	-	-	-	-	-	
1000	2913	616	482	315	-	-	-	-	-	-	-	-	-	-	-	-	
		6.1	0.06	5.8	0.06	5.7	0.04	-	-	-	-	-	-	-	-	-	
1050	3058	647	519	368	146	-	-	-	-	-	-	-	-	-	-	-	
		6.4	0.07	6.2	0.07	6.2	0.05	6.2	0.03	-	-	-	-	-	-	-	
1100	3204	677	558	418	227	-	-	-	-	-	-	-	-	-	-	-	
		6.8	0.08	6.6	0.08	6.5	0.06	6.4	0.05	-	-	-	-	-	-	-	
1150	3349	708	595	465	293	-	-	-	-	-	-	-	-	-	-	-	
		7.3	0.09	7.2	0.09	7.0	0.08	6.9	0.06	-	-	-	-	-	-	-	
1200	3495	739	633	510	356	148	-	-	-	-	-	-	-	-	-	-	
		7.8	0.11	7.7	0.11	7.5	0.09	7.4	0.07	7.2	0.05	-	-	-	-	-	
1250	3641	770	668	554	415	230	-	-	-	-	-	-	-	-	-	-	
		8.3	0.12	8.2	0.12	8.1	0.11	8.0	0.09	7.8	0.06	-	-	-	-	-	
1300	3786	801	702	596	465	302	-	-	-	-	-	-	-	-	-	-	
		8.8	0.14	8.7	0.13	8.6	0.12	8.5	0.10	8.3	0.08	-	-	-	-	-	
1350	3932	831	737	634	514	367	180	-	-	-	-	-	-	-	-	-	
		9.3	0.15	9.2	0.15	9.1	0.14	8.9	0.12	8.8	0.10	8.5	0.07	-	-	-	
1401	4080	863	771	672	562	429	263	-	-	-	-	-	-	-	-	-	
		9.9	0.17	9.8	0.17	9.6	0.16	9.5	0.14	9.4	0.12	9.0	0.09	-	-	-	
1/4	1450	4223	893	805	709	608	486	333	145	-	-	-	-	-	-	-	
			10.5	0.19	10.4	0.19	10.3	0.18	10.1	0.16	10.1	0.13	9.7	0.11	9.2	0.08	
	1500	4369	924	838	746	652	536	398	232	-	-	-	-	-	-	-	
			11.2	0.21	11.1	0.21	10.9	0.20	10.8	0.18	10.7	0.16	10.5	0.14	10.1	0.10	
	1550	4514	955	871	784	695	585	460	312	-	-	-	-	-	-	-	
			11.8	0.23	11.7	0.23	11.6	0.23	11.5	0.21	11.4	0.18	11.2	0.16	10.9	0.13	
	1600	4660	986	904	822	736	633	521	380	-	-	-	-	-	-	-	
			12.3	0.25	12.3	0.25	12.2	0.25	12.1	0.23	12.0	0.21	11.9	0.18	11.5	0.15	
1624	4730	1000	920	840	754	655	546	411	-	-	-	-	-	-	-		
		12.6	0.26	12.6	0.26	12.5	0.26	12.4	0.25	12.3	0.22	12.2	0.19	11.8	0.17		

Performance shown is for installation type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Performance ratings do not include the effects of appurtenances in the airstream.

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LVQ Dynafan

Dimensional Information & Performance Data

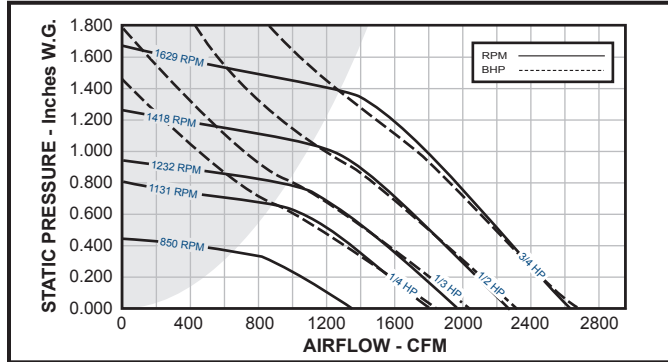
Belt Drive | LVQ Dynafan Centrifugal Fans



HA11BC

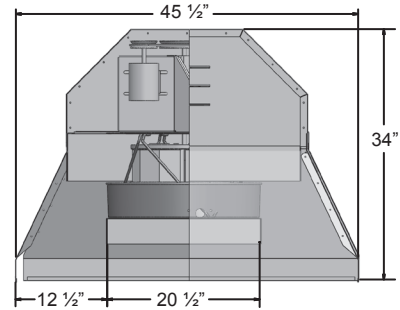
Centrifugal Fans

HA11BC Belt Drive Fan Curves



HA11BC Belt Drive Fan Dimensional Data

Galv. Steel Base = 16 ga.
Galv. Motor Hood = 18 ga.
Galv. Disch. Skirt = 18 ga.
Roof Opening = 16" SQ.
Damper Size = 15 3/4" SQ.
Max. Motor Frame Size = 56
Peak BHP = (RPM/1763) ³
Max. RPM = 1680 (3/4 HP)
Est. Ship Weight = 180 lbs.

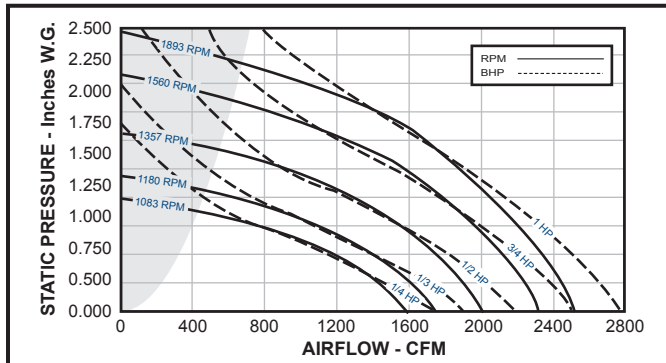


HA11BC Belt Drive Fan Performance Data

HP	RPM	Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.125" SP	
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1/4	600	2199	974	-	687	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			4.3	0.04	3.7	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	650	2382	1056	-	788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			5.1	0.05	4.7	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	700	2566	1137	-	891	-	581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			5.9	0.06	5.5	0.06	4.4	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	750	2749	1218	-	988	-	739	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			6.7	0.07	6.3	0.07	5.4	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	800	2932	1299	-	1083	-	866	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			7.6	0.08	7.2	0.09	6.6	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	850	3115	1381	-	1173	-	974	-	675	-	-	-	-	-	-	-	-	-	-	-	-	-
			8.0	0.10	7.5	0.11	7.1	0.11	6.1	0.11	-	-	-	-	-	-	-	-	-	-	-	-
900	3299	1462	-	1262	-	1075	-	853	-	-	-	-	-	-	-	-	-	-	-	-	-	
		8.4	0.12	7.8	0.13	7.6	0.13	6.6	0.13	-	-	-	-	-	-	-	-	-	-	-	-	
950	3482	1543	-	1350	-	1179	-	988	-	-	-	-	-	-	-	-	-	-	-	-	-	
		9.0	0.14	8.1	0.15	7.9	0.15	7.3	0.16	-	-	-	-	-	-	-	-	-	-	-	-	
1000	2665	1624	-	1440	-	1281	-	1109	-	861	-	-	-	-	-	-	-	-	-	-	-	
		9.6	0.17	8.7	0.17	8.4	0.18	7.9	0.18	7.0	0.18	-	-	-	-	-	-	-	-	-	-	
1050	3848	1706	-	1530	-	1377	-	1211	-	1015	-	-	-	-	-	-	-	-	-	-	-	
		10.1	0.19	9.0	0.20	8.8	0.21	8.4	0.21	7.6	0.21	-	-	-	-	-	-	-	-	-	-	
1100	4032	1787	-	1618	-	1472	-	1312	-	1148	-	885	-	-	-	-	-	-	-	-	-	
		10.7	0.22	9.4	0.23	9.1	0.24	8.8	0.24	8.2	0.24	7.5	0.24	-	-	-	-	-	-	-	-	
1131	4145	1837	-	1673	-	1530	-	1376	-	1224	-	1012	-	-	-	-	-	-	-	-	-	
		11.0	0.24	9.7	0.25	9.4	0.25	9.1	0.26	8.7	0.26	7.9	0.26	-	-	-	-	-	-	-	-	
1/3	1150	4215	1868	-	1706	-	1565	-	1416	-	1269	-	1068	-	-	-	-	-	-	-	-	-
			11.2	0.25	10.0	0.26	9.7	0.27	9.4	0.27	9.0	0.28	8.3	0.27	-	-	-	-	-	-	-	-
			1949	-	1794	-	1655	-	1519	-	1374	-	1207	-	945	-	-	-	-	-	-	-
1200	4398	12.0	0.29	10.7	0.29	10.4	0.30	10.2	0.31	9.9	0.31	9.2	0.31	8.6	0.30	-	-	-	-	-	-	
		2001	-	1849	-	1713	-	1583	-	1438	-	1289	-	1082	-	-	-	-	-	-	-	-
1232	4516	12.4	0.31	11.3	0.32	11.0	0.33	10.7	0.33	10.4	0.34	9.8	0.34	9.1	0.33	-	-	-	-	-	-	
1/2	1275	4675	2071	-	1923	-	1789	-	1666	-	1525	-	1393	-	1212	-	-	-	-	-	-	-
			13.2	0.34	12.0	0.35	11.7	0.36	11.4	0.37	11.1	0.37	10.7	0.38	9.9	0.37	-	-	-	-	-	-
			2152	-	2009	-	1877	-	1761	-	1629	-	1502	-	1351	-	1148	-	-	-	-	-
	1325	4856	14.0	0.39	12.8	0.39	12.5	0.41	12.2	0.41	11.9	0.42	11.6	0.42	11.0	0.42	10.3	0.42	-	-	-	-
		2234	-	2094	-	1966	-	1855	-	1732	-	1603	-	1474	-	1304	-	-	-	-	-	-
1375	5040	14.9	0.43	13.8	0.44	13.4	0.45	13.1	0.46	12.8	0.47	12.5	0.47	12.0	0.47	11.2	0.47	-	-	-	-	
		2304	-	2166	-	2044	-	1935	-	1819	-	1690	-	1576	-	1423	-	1233	-	-	-	-
1418	5197	15.6	0.47	14.5	0.48	14.2	0.49	13.9	0.50	13.6	0.51	13.3	0.52	12.9	0.52	12.2	0.52	11.5	0.51	-	-	
		2396	-	2263	-	2146	-	2037	-	1929	-	1808	-	1693	-	1568	-	1408	-	-	-	-
3/4	1475	5406	16.6	0.53	15.6	0.54	15.3	0.55	15.0	0.56	14.7	0.57	14.4	0.58	14.1	0.58	13.4	0.59	12.7	0.58	12.3	0.57
			2437	-	2305	-	2190	-	2082	-	1977	-	1860	-	1744	-	1628	-	1478	-	1292	-
	1500	5498	17.0	0.56	16.1	0.57	15.8	0.58	15.5	0.59	15.2	0.60	14.9	0.61	14.6	0.61	14.0	0.62	13.3	0.61	12.7	0.60
			2477	-	2347	-	2235	-	2126	-	2024	-	1911	-	1794	-	1688	-	1547	-	1381	-
	1525	5589	17.5	0.59	16.6	0.60	16.3	0.61	16.0	0.62	15.7	0.63	15.5	0.64	15.2	0.64	14.6	0.65	13.9	0.65	13.2	0.64
			2518	-	2389	-	2279	-	2171	-	2072	-	1962	-	1844	-	1741	-	1610	-	1453	-
	1550	5681	18.0	0.62	17.2	0.63	16.8	0.64	16.5	0.65	16.3	0.66	16.0	0.67	15.7	0.67	15.2	0.68	14.6	0.68	13.8	0.67
			2559	-	2431	-	2323	-	2215	-	2119	-	2013	-	1895	-	1792	-	1671	-	1523	-
1575	5773	18.5	0.65	17.7	0.66	17.4	0.67	17.1	0.68	16.8	0.69	16.5	0.70	16.2	0.71	15.9	0.71	15.2	0.71	14.4	0.71	
		2599	-	2473	-	2367	-	2259	-	2166	-	2062	-	1947	-	1843	-	1732	-	1592	-	
1600	5864	19.0	0.68	18.2	0.69	17.9	0.70	17.6	0.71	17.3	0.72	17.0	0.73	16.7	0.74	16.4	0.74	15.8	0.75	15.0	0.74	
		2646	-	2521	-	2418	-	2310	-	2219	-	2118	-	2008	-	1901	-	1801	-	1671	-	
1629	5971	19.5	0.72	18.8	0.73	18.5	0.74	18.2	0.75	17.9	0.76	17.6	0.77	17.3	0.78	17.0	0.78	16.4	0.79	15.8	0.79	

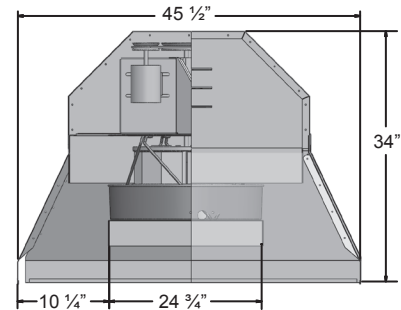
Performance shown is for installation type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Performance ratings do not include the effects of appurtenances in the airstream.

› HA12BC Belt Drive Fan Curves



› HA12BC Belt Drive Fan Dimensional Data

Galv. Steel Base = 16 ga.
Galv. Motor Hood = 18 ga.
Galv. Disch. Skirt = 18 ga.
Roof Opening = 16" SQ.
Damper Size = 15 3/4" SQ.
Max. Motor Frame Size = 56
Peak BHP = (RPM/1689) ³
Max. RPM = 1874 (1 HP)
Est. Ship Weight = 180 lbs.



Centrifugal Fans

› HA12BC Belt Drive Fan Performance Data

HP	RPM	Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.125" SP			
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1/4	750	3117	1393		1251		1041		699		-		-		-		-		-		-		-	
			7.2	0.06	6.1	0.08	5.5	0.08	5.6	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	800	3325	1486		1363		1164		918		-		-		-		-		-		-		-	
			8.3	0.08	7.2	0.09	6.6	0.10	6.5	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	850	3533	1579		1472		1284		1077		717		-		-		-		-		-		-	
			9.5	0.09	8.4	0.11	7.6	0.12	7.5	0.13	7.3	0.12	-	-	-	-	-	-	-	-	-	-	-	-
	900	3740	1671		1581		1401		1228		969		-		-		-		-		-		-	
			11.1	0.11	10.0	0.12	9.0	0.14	8.9	0.15	8.9	0.15	-	-	-	-	-	-	-	-	-	-	-	-
	950	3948	1764		1678		1518		1353		1145		800		-		-		-		-		-	
			12.9	0.13	11.8	0.14	10.7	0.16	10.7	0.17	10.7	0.18	10.1	0.17	-	-	-	-	-	-	-	-	-	-
1000	4156	1857		1775		1633		1474		1300		1054		605		-		-		-		-		
		13.3	0.15	12.3	0.17	11.2	0.18	11.1	0.19	11.1	0.20	11.1	0.20	10.4	0.17	-	-	-	-	-	-	-	-	
1050	4364	1950		1872		1746		1594		1445		1242		934		-		-		-		-		
		13.6	0.17	12.7	0.19	11.4	0.21	11.2	0.22	11.2	0.23	11.2	0.24	11.1	0.23	-	-	-	-	-	-	-	-	
1083	4501	2011		1936		1820		1672		1527		1346		1096		674		-		-		-		
		13.9	0.19	13.0	0.21	11.7	0.22	11.4	0.24	11.3	0.25	11.4	0.26	11.5	0.26	11.1	0.22	-	-	-	-	-	-	
1/3	1100	4572	2043		1969		1858		1712		1569		1399		1177		790		-		-		-	
			14.0	0.20	13.1	0.22	11.9	0.23	11.5	0.25	11.3	0.26	11.4	0.27	11.6	0.27	11.4	0.25	-	-	-	-	-	-
	1125	4676	2089		2017		1913		1770		1631		1475		1278		952		-		-		-	
			14.5	0.21	13.4	0.23	12.2	0.25	11.6	0.26	11.4	0.28	11.5	0.29	11.7	0.29	11.8	0.28	-	-	-	-	-	-
	1150	4779	2136		2065		1968		1828		1691		1551		1360		1090		666		-		-	
15.1			0.23	14.0	0.25	12.8	0.27	12.1	0.28	11.9	0.29	11.9	0.31	11.8	0.32	12.0	0.31	11.9	0.26	-	-	-	-	
1180	4904	2192		2122		2034		1898		1763		1631		1455		1233		873		-		-		
		15.6	0.25	14.6	0.27	13.5	0.29	12.7	0.30	12.5	0.31	12.4	0.33	12.3	0.34	12.2	0.34	12.2	0.31	-	-	-	-	
1/2	1225	5091	2275		2208		2132		2001		1870		1743		1594		1413		1144		743		-	
			16.0	0.28	15.1	0.30	14.2	0.32	13.2	0.33	12.9	0.35	12.8	0.36	12.7	0.37	12.6	0.38	12.5	0.37	12.7	0.32	-	-
	1275	5299	2368		2304		2240		2114		1988		1865		1742		1573		1381		1076		-	
			16.3	0.31	15.5	0.33	14.8	0.35	13.6	0.37	13.2	0.39	12.8	0.40	12.8	0.42	12.8	0.43	12.9	0.43	13.1	0.41	-	-
1325	5507	2461		2399		2338		2226		2104		1985		1867		1727		1561		1336		-		
		16.6	0.35	15.9	0.37	15.2	0.39	14.1	0.41	13.5	0.43	13.1	0.44	12.9	0.46	13.0	0.47	13.1	0.48	13.3	0.47	-	-	
1357	5640	2520		2460		2400		2297		2178		2061		1946		1824		1663		1487		-		
		16.9	0.38	16.2	0.40	15.6	0.42	14.5	0.44	13.9	0.46	13.4	0.47	13.1	0.49	13.2	0.51	13.3	0.51	13.5	0.51	-	-	
3/4	1425	5922	2647		2589		2532		2447		2334		2221		2111		2002		1872		1718		-	
			17.8	0.44	17.2	0.46	16.6	0.48	15.8	0.50	15.1	0.52	14.6	0.54	14.1	0.56	13.9	0.57	13.9	0.59	14.0	0.60	-	-
	1475	6130	2740		2684		2629		2556		2447		2338		2231		2125		2019		1874		-	
			18.6	0.48	18.1	0.51	17.5	0.53	16.8	0.55	16.1	0.57	15.5	0.59	15.0	0.61	14.6	0.63	14.5	0.65	14.5	0.66	-	-
1525	6338	2833		2779		2725		2665		2559		2454		2349		2246		2144		2027		-		
		19.1	0.54	18.5	0.56	18.0	0.59	17.5	0.61	16.7	0.63	16.1	0.65	15.6	0.67	15.0	0.68	14.8	0.70	14.8	0.72	-	-	
1560	6483	2898		2845		2793		2740		2637		2534		2431		2331		2230		2130		-		
		19.4	0.57	18.9	0.60	18.4	0.62	17.9	0.65	17.1	0.67	16.5	0.69	16.0	0.71	15.5	0.73	15.1	0.75	15.1	0.76	-	-	
1	1575	6546	2925		2873		2822		2770		2671		2568		2466		2366		2267		2168		-	
			19.5	0.59	19.1	0.62	18.6	0.64	18.1	0.67	17.3	0.69	16.7	0.71	16.2	0.73	15.7	0.74	15.3	0.76	15.2	0.78	-	-
	1600	6650	2972		2921		2870		2819		2726		265		2524		2426		2326		2230		-	
			19.8	0.62	19.4	0.64	18.9	0.67	18.5	0.70	17.7	0.72	17.1	0.74	16.6	0.76	16.1	0.78	15.6	0.80	15.5	0.82	-	-
	1625	6754	3018		2968		2918		2867		2781		2682		2583		2485		2389		2293		-	
			20.0	0.65	19.8	0.67	19.3	0.70	18.9	0.73	18.2	0.75	17.6	0.77	17.1	0.79	16.5	0.81	16.0	0.83	15.8	0.85	-	-
	1650	6858	3065		3015		2966		2916		2836		2738		2641		2544		2449		2354		-	
			21.0	0.68	20.0	0.70	19.7	0.73	19.3	0.76	18.7	0.78	18.1	0.80	17.6	0.82	17.0	0.84	16.5	0.86	16.1	0.88	-	-
1675	6961	3111		3062		3014		2965		2891		2794		2698		2602		2509		2416		-		
		21.0	0.71	21.0	0.74	20.0	0.76	19.8	0.79	19.2	0.82	18.6	0.84	18.1	0.86	17.6	0.88	17.1	0.90	16.6	0.92	-	-	
1693	7036	3145		3096		3048		3000		2930		2835		2740		2644		2552		2460		-		
		21.0	0.73	21.0	0.76	21.0	0.79	20.0	0.82	19.6	0.84	19.0	0.86	18.5	0.88	18.0	0.90	17.5	0.92	17.0	0.94	-	-	

Performance shown is for installation type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Performance ratings do not include the effects of appurtenances in the airstream.

LVQ Dynafan

Dimensional Information & Performance Data

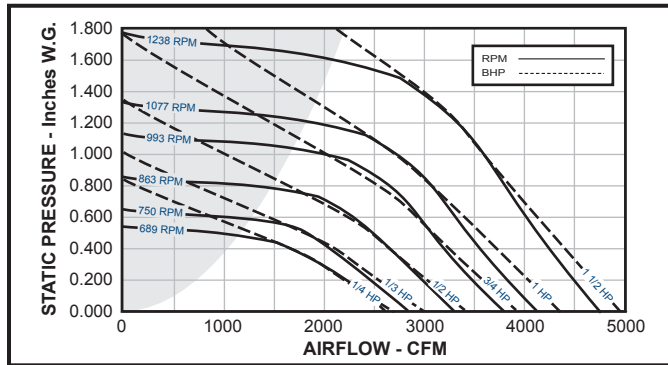
Belt Drive | LVQ Dynafan Centrifugal Fans



HA16BC

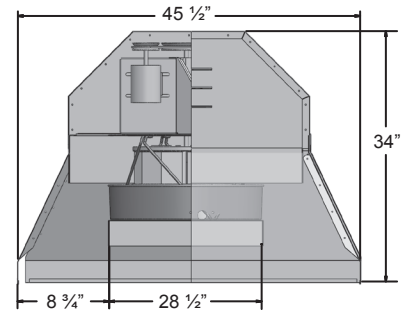
Centrifugal Fans

HA16BC Belt Drive Fan Curves



HA16BC Belt Drive Fan Dimensional Data

Galv. Steel Base = 14 ga.
Galv. Motor Hood = 18 ga.
Galv. Disch. Skirt = 18 ga.
Roof Opening = 20" SQ.
Damper Size = 19 3/4" SQ.
Max. Motor Frame Size = 145T
Peak BHP = (RPM/1075) ³
Max. RPM = 1302 (1 1/2 HP)
Est. Ship Weight = 185 lbs.

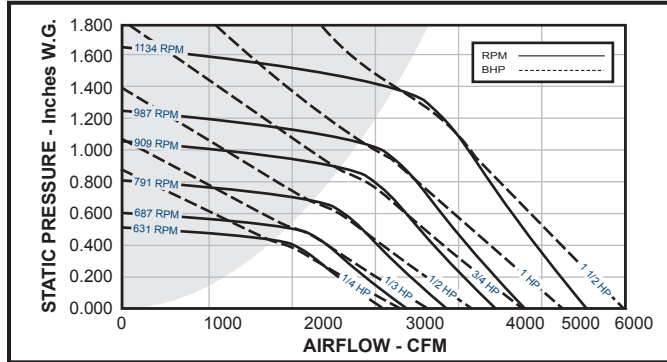


HA16BC Belt Drive Fan Performance Data

HP	RPM	Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.125" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	
1/4	450	2209	1714	-	1318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	575	2823	4.0	0.06	3.3	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			2190	1872	1570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
689	3382	6.5	0.13	5.9	0.14	5.3	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		2624	2358	2104	1847	1202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/3	710	3485	9.2	0.23	8.5	0.24	8.1	0.25	7.5	0.26	6.4	0.23	-	-	-	-	-	-	-	-	-	-	-
			2704	2446	2198	1952	1510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	720	3534	9.8	0.25	9.2	0.26	8.7	0.27	8.1	0.28	7.0	0.28	-	-	-	-	-	-	-	-	-	-	-
			2742	2487	2242	2001	1619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
735	3608	10.1	0.26	9.4	0.27	9.0	0.28	8.4	0.30	7.5	0.29	-	-	-	-	-	-	-	-	-	-	-	
		2799	2549	2308	2075	1755	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
750	3682	10.6	0.27	10.0	0.29	9.4	0.30	8.9	0.31	8.1	0.32	-	-	-	-	-	-	-	-	-	-	-	
		2857	2610	2374	2147	1860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/2	785	3853	11.1	0.29	10.5	0.31	10.0	0.32	9.5	0.33	8.7	0.34	-	-	-	-	-	-	-	-	-	-	-
			2990	2752	2527	2309	2079	1581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	820	4025	12.5	0.33	11.8	0.35	11.2	0.36	10.7	0.38	10.2	0.39	8.9	0.37	-	-	-	-	-	-	-	-	-
			3123	2894	2677	2469	2255	1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
845	4148	13.8	0.38	13.2	0.40	12.6	0.41	12.0	0.43	11.4	0.44	10.7	0.44	-	-	-	-	-	-	-	-	-	-
		3218	2994	2786	2582	2378	2125	1494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
863	4236	14.2	0.42	13.5	0.43	13.0	0.45	12.4	0.46	11.9	0.48	11.2	0.48	10.2	0.43	-	-	-	-	-	-	-	-
		3287	3067	2863	2663	2465	2250	1771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	900	4418	14.4	0.44	13.8	0.46	13.2	0.48	12.7	0.49	12.2	0.51	11.7	0.52	10.6	0.49	-	-	-	-	-	-	-
			3428	3214	3021	2827	2637	2437	2148	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	950	4663	15.0	0.50	14.4	0.52	13.9	0.54	13.4	0.55	12.9	0.57	12.4	0.58	11.7	0.58	-	-	-	-	-	-	-
			3618	3413	3233	3045	2865	2685	2488	2117	-	-	-	-	-	-	-	-	-	-	-	-	-
975	4786	15.9	0.59	15.3	0.61	14.9	0.63	14.4	0.65	13.9	0.66	13.5	0.68	13.0	0.69	12.0	0.67	-	-	-	-	-	
		3714	3512	3338	3153	2978	2803	2615	2340	1711	-	-	-	-	-	-	-	-	-	-	-	-	-
993	4874	16.4	0.64	15.8	0.66	15.4	0.68	14.9	0.70	14.4	0.71	13.9	0.73	13.5	0.74	12.8	0.74	11.6	0.66	-	-	-	-
		3782	3584	3413	3231	3059	2887	2705	2467	2000	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1015	4982	16.7	0.68	16.2	0.70	115.7	0.71	15.2	0.73	14.8	0.75	14.3	0.77	13.8	0.78	13.2	0.78	12.1	0.74	-	-	-
			3866	3670	3504	3326	3157	2988	2815	2620	2257	-	-	-	-	-	-	-	-	-	-	-	-
	1020	5007	17.1	0.72	16.6	0.75	16.2	0.76	15.7	0.78	15.2	0.80	14.7	0.81	14.2	0.83	13.7	0.84	12.9	0.82	-	-	-
			3885	3690	3525	3347	3179	3011	2839	2655	2308	-	-	-	-	-	-	-	-	-	-	-	-
	1040	5105	17.1	0.73	16.7	0.76	16.3	0.77	15.8	0.79	15.2	0.81	14.8	0.83	14.3	0.84	13.8	0.85	13.0	0.83	-	-	-
3961			3769	3607	3434	3267	3103	2938	2758	2486	1930	-	-	-	-	-	-	-	-	-	-	-	-
1060	5203	17.4	0.78	16.9	0.80	16.6	0.81	16.1	0.84	15.6	0.85	15.1	0.87	14.7	0.89	14.2	0.90	13.5	0.90	12.6	0.82	-	-
		4037	3849	3688	3520	3355	3194	3033	2859	2627	2206	-	-	-	-	-	-	-	-	-	-	-	-
1077	5287	17.7	0.82	17.2	0.85	16.8	0.86	16.4	0.88	15.9	0.90	15.5	0.92	15.0	0.94	14.5	0.95	13.9	0.95	13.1	0.91	-	-
		4102	3917	3758	3593	3429	3271	3112	2944	2745	2398	-	-	-	-	-	-	-	-	-	-	-	-
1125	5522	18.0	0.86	17.5	0.89	17.1	0.90	16.7	0.92	16.2	0.94	15.8	0.96	15.3	0.98	14.8	1.00	14.3	1.00	13.6	0.98	-	-
		4285	4108	3953	3797	3637	3486	3334	3181	3015	2791	-	-	-	-	-	-	-	-	-	-	-	-
1150	5645	19.0	0.98	18.6	1.01	18.2	1.03	17.8	1.05	17.3	1.07	16.9	1.09	16.4	1.11	15.9	1.13	15.3	1.14	14.8	1.14	-	-
		4380	4207	4054	3903	3745	3597	3448	3300	3141	2965	-	-	-	-	-	-	-	-	-	-	-	-
1175	5768	19.6	1.05	19.2	1.08	18.8	1.09	18.5	1.11	18.0	1.14	17.5	1.16	17.1	1.18	16.6	1.20	16.0	1.21	15.4	1.22	-	-
		4476	4306	4154	4008	3853	3707	3562	3416	3265	3106	-	-	-	-	-	-	-	-	-	-	-	-
1200	5890	20.0	1.12	19.8	1.15	19.5	1.17	19.2	1.18	18.7	1.21	18.2	1.23	17.8	1.25	17.3	1.27	16.8	1.29	16.2	1.30	-	-
		4571	4404	4255	4113	3961	3816	3674	3532	3388	3232	-	-	-	-	-	-	-	-	-	-	-	-
1225	6013	21.0	1.19	21.0	1.22	20.0	1.24	19.9	1.26	19.4	1.28	19.0	1.31	18.5	1.33	18.1	1.35	17.6	1.37	17.0	1.38	-	-
		4666	4503	4355	4217	4069	3925	3786	3646	3507	3357	-	-	-	-	-	-	-	-	-	-	-	-
1238	6077	21.0	1.27	21.0	1.30	21.0	1.32	20.0	1.34	19.9	1.36	19.5	1.38	19.0	1.40	18.6	1.43	18.1	1.45	17.6	1.46	-	-
		4716	4554	4407	4271	4125	3981	3844	3706	3568	3422	-	-	-	-	-	-	-	-	-	-	-	-
			22.0	1.31	21.0	1.34	21.0	1.36	21.0	1.38	20.0	1.40	19.7	1.43	19.3	1.45	18.9	1.47	18.4	1.49	17.8	1.51	-

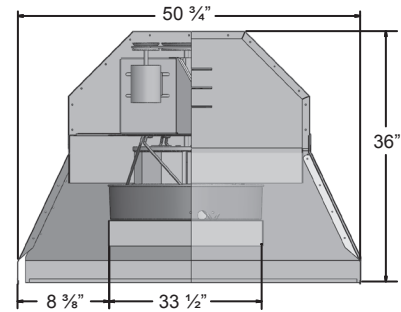
Performance shown is for installation type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Performance ratings do not include the effects of appurtenances in the airstream.

› HA18BC Belt Drive Fan Curves



› HA18BC Belt Drive Fan Dimensional Data

Galv. Steel Base = 14 ga.
Galv. Motor Hood = 18 ga.
Galv. Disch. Skirt = 18 ga.
Roof Opening = 20" SQ.
Damper Size = 19 3/4" SQ.
Max. Motor Frame Size = 145T
Peak BHP = (RPM/985) ³
Max. RPM = 1360 (2 HP)
Est. Ship Weight = 190 lbs.



Centrifugal Fans

› HA18BC Belt Drive Fan Performance Data

HP	RPM	Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		.625" SP		0.750" SP		0.875" SP		1.000" SP		1.125" SP			
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP		
1/4	425	2253	2065		1588		-		-		-		-		-		-		-		-			
			5.0	0.06	4.0	0.08	-		-		-		-		-		-		-		-			
	525	2783	2552		2165		1770		-		-		-		-		-		-		-		-	
7.3			0.12	6.5	0.14	5.5	0.15	-		-		-		-		-		-		-		-		
631	3345	3067		2738		2424		2089		-		-		-		-		-		-		-		
		9.9	0.20	9.4	0.23	8.4	0.24	7.3	0.26	-		-		-		-		-		-		-		
1/3	645	3419	3135		2812		2506		2181		-		-		-		-		-		-		-	
			10.3	0.22	9.8	0.24	8.9	0.26	7.7	0.28	-		-		-		-		-		-		-	
	660	3499	3208		2891		2593		2279		-		-		-		-		-		-		-	
10.6			0.23	10.1	0.26	9.3	0.28	8.1	0.29	-		-		-		-		-		-		-		
675	3578	3281		2970		2680		2376		-		-		-		-		-		-		-		
		10.7	0.25	10.2	0.27	9.5	0.29	8.5	0.31	-		-		-		-		-		-		-		
687	3642	3339		3032		2749		2453		2025		-		-		-		-		-		-		
		10.9	0.26	10.4	0.29	9.7	0.31	8.7	0.33	7.5	0.33	-		-		-		-		-		-		
1/2	715	3791	3475		3179		2908		2624		2321		-		-		-		-		-		-	
			11.4	0.30	10.9	0.32	10.2	0.34	9.4	0.37	8.4	0.38	-		-		-		-		-		-	
	740	3923	3597		3308		3049		2774		2487		-		-		-		-		-		-	
			12.0	0.33	11.5	0.36	10.8	0.38	10.0	0.40	9.1	0.42	-		-		-		-		-		-	
765	4056	3718		3437		3187		2923		2651		2216		-		-		-		-		-		
		12.6	0.36	12.1	0.39	11.5	0.42	10.7	0.44	9.8	0.46	8.5	0.46	-		-		-		-		-		
791	4193	3845		3571		3329		3075		2818		2524		-		-		-		-		-		
		13.4	0.40	12.9	0.43	12.4	0.46	11.6	0.48	10.7	0.50	9.8	0.52	-		-		-		-		-		
3/4	825	4374	4010		3745		3512		3272		3026		2765		-		-		-		-		-	
			14.0	0.46	13.6	0.49	13.1	0.51	12.4	0.54	11.5	0.56	10.7	0.58	-		-		-		-		-	
	855	4533	4156		3898		3673		3444		3206		2962		2658		-		-		-		-	
			14.4	0.51	13.9	0.54	13.5	0.57	12.9	0.59	12.2	0.62	11.4	0.64	10.6	0.65	-		-		-		-	
885	4692	4302		4051		3833		3614		3384		3155		2905		-		-		-		-		
		15.0	0.56	14.4	0.60	14.0	0.63	13.4	0.65	12.7	0.68	12.0	0.70	11.3	0.72	-		-		-		-		
909	4819	4418		4172		3960		3749		3525		3302		3064		2681		-		-		-		
		15.7	0.61	15.1	0.64	14.6	0.68	14.1	0.70	13.3	0.73	12.6	0.75	11.9	0.78	11.0	0.77	-		-		-		
1	925	4904	4496		4253		4044		3838		3619		3399		3169		2888		-		-		-	
			16.2	0.64	15.6	0.68	15.1	0.71	14.6	0.74	13.9	0.76	13.1	0.79	12.5	0.81	11.7	0.83	-		-		-	
	940	4983	4569		4329		4123		3920		3706		3490		3266		3022		-		-		-	
			16.6	0.67	16.1	0.71	15.6	0.74	15.2	0.77	14.5	0.80	13.7	0.82	13.0	0.85	12.3	0.87	-		-		-	
	955	5063	4642		4404		4202		4002		3792		3579		3363		3132		-		-		-	
17.2			0.71	16.6	0.74	16.1	0.78	15.7	0.81	15.0	0.83	14.3	0.86	13.6	0.89	12.8	0.91	-		-		-		
970	5142	4715		4480		4281		4084		3878		3669		3459		3231		2840		-		-		
		17.7	0.74	17.2	0.78	16.7	0.81	16.2	0.84	15.6	0.87	14.9	0.90	14.3	0.92	13.4	0.95	12.3	0.94	-		-		
987	5233	4797		4565		4369		4176		3976		3769		3564		3344		3066		-		-		
		18.4	0.78	17.8	0.82	17.4	0.85	16.9	0.88	16.3	0.91	15.6	0.94	15.0	0.97	14.2	0.99	13.3	1.00	-		-		
1 1/2	1015	5381	4934		4707		4515		4327		4134		3934		3734		3526		3308		-		-	
			18.9	0.85	18.4	0.89	17.9	0.92	17.5	0.96	17.0	0.98	16.3	1.01	15.7	1.04	15.0	1.07	14.3	1.09	-		-	
	1040	5513	5055		4834		4645		4461		4275		4080		3884		3687		3475		3173		-	
			19.3	0.91	18.8	0.95	18.4	0.99	18.0	1.02	17.4	1.05	16.8	1.08	16.2	1.11	15.6	1.14	14.9	1.17	14.0	1.17	-	
	1065	5646	5177		4961		4774		4594		4415		4224		4033		3843		3639		3419		-	
			19.8	0.98	19.3	1.02	18.8	1.06	18.4	1.10	18.0	1.12	17.3	1.16	16.7	1.19	16.1	1.22	15.5	1.24	14.9	1.26	-	
	1090	5779	5298		5087		4903		4727		4552		4368		4181		3995		3801		3599		-	
20.0			1.05	19.8	1.09	19.4	1.13	19.0	1.17	18.6	1.20	17.9	1.23	17.3	1.26	16.7	1.29	16.1	1.32	15.6	1.35	-		
1115	5911	5420		5213		5032		4859		4688		4510		4328		4146		3962		3764		-		
		21.0	1.12	20.0	1.17	20.0	1.21	19.6	1.25	19.2	1.28	18.6	1.31	18.0	1.34	17.3	1.38	16.8	1.41	16.2	1.43	-		
1134	6012	5512		5309		5129		4959		4791		4618		4439		4259		4080		3888		-		
		21.0	1.18	21.0	1.23	20.0	1.27	20.0	1.31	19.7	1.34	19.1	1.37	18.5	1.41	17.9	1.44	17.3	1.47	16.8	1.50	-		

Performance shown is for installation type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Performance ratings do not include the effects of appurtenances in the airstream.

LVQ Dynafan

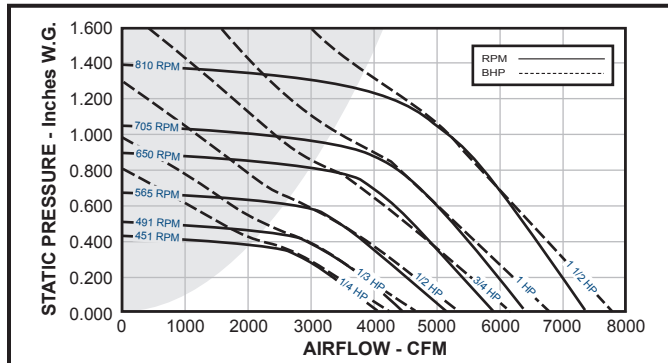
Dimensional Information & Performance Data

Belt Drive | LVQ Dynafan Centrifugal Fans



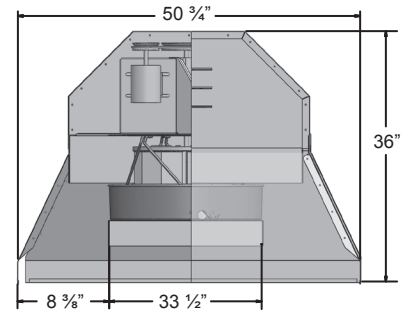
HA24BC

HA24BC Belt Drive Fan Curves



HA24BC Belt Drive Fan Dimensional Data

Galv. Steel Base = 14 ga.
Galv. Motor Hood = 18 ga.
Galv. Disch. Skirt = 18 ga.
Roof Opening = 25" SQ.
Damper Size = 24 3/4" SQ.
Max. Motor Frame Size = 184T
Peak BHP = (RPM/704) ³
Max. RPM = 1088 (3 HP)
Est. Ship Weight = 225 lbs.



HA24BC Belt Drive Fan Performance Data

HP	RPM	Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.125" SP			
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1	300	1949	2733	-	2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			6.1	0.06	5.0	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	375	2436	3417	-	2882	-	2057	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			8.9	0.13	8.2	0.15	6.1	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
451	2930	4110	-	3665	-	3193	-	2360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		9.8	0.22	9.1	0.25	8.2	0.26	6.2	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/3	460	2988	4192	-	3755	-	3296	-	2534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			10.0	0.23	9.3	0.26	8.4	0.28	6.4	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	470	3053	4283	-	3855	-	3410	-	2720	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			10.3	0.25	9.6	0.28	8.7	0.29	6.9	0.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-
480	3118	4374	-	3955	-	3523	-	2896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		10.5	0.26	9.8	0.29	8.9	0.31	7.3	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
491	3189	4474	-	4064	-	3647	-	3086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		10.7	0.28	10.1	0.31	9.2	0.33	7.8	0.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1/2	520	3378	4738	-	4351	-	3967	-	3507	-	2705	-	-	-	-	-	-	-	-	-	-	-	-	
			11.2	0.34	10.6	0.37	9.8	0.39	8.7	0.40	7.0	0.38	-	-	-	-	-	-	-	-	-	-	-	-
	535	3475	4875	-	4499	-	4125	-	3710	-	2998	-	-	-	-	-	-	-	-	-	-	-	-	
			11.6	0.36	10.9	0.40	10.1	0.43	9.2	0.44	7.5	0.42	-	-	-	-	-	-	-	-	-	-	-	-
540	3508	4921	-	4548	-	4178	-	3768	-	3093	-	-	-	-	-	-	-	-	-	-	-	-	-	
		11.7	0.38	11.0	0.41	10.3	0.44	9.4	0.45	7.8	0.44	-	-	-	-	-	-	-	-	-	-	-	-	
565	3670	5148	-	4793	-	4439	-	4055	-	3530	-	-	-	-	-	-	-	-	-	-	-	-	-	
		12.4	0.43	11.7	0.47	11.0	0.50	10.3	0.51	8.9	0.51	-	-	-	-	-	-	-	-	-	-	-	-	
3/4	590	3833	5376	-	5036	-	4697	-	4339	-	3900	-	3197	-	-	-	-	-	-	-	-	-	-	
			13.4	0.49	12.7	0.53	12.0	0.56	11.3	0.58	10.3	0.59	8.8	0.56	-	-	-	-	-	-	-	-	-	-
	610	3962	5559	-	5230	-	4901	-	4563	-	4185	-	3569	-	-	-	-	-	-	-	-	-	-	
			14.1	0.54	13.4	0.58	12.7	0.62	12.0	0.64	11.2	0.65	10.0	0.64	-	-	-	-	-	-	-	-	-	-
630	4092	5741	-	5423	-	5104	-	4785	-	4426	-	3918	-	3131	-	-	-	-	-	-	-	-	-	
		14.6	0.60	13.9	0.64	13.2	0.67	12.6	0.70	11.9	0.71	10.6	0.71	9.7	0.67	-	-	-	-	-	-	-	-	
650	4222	5923	-	5616	-	5305	-	4997	-	4655	-	4221	-	3573	-	-	-	-	-	-	-	-	-	
		15.1	0.65	14.4	0.70	13.8	0.74	13.1	0.77	12.5	0.78	11.4	0.78	10.3	0.76	-	-	-	-	-	-	-	-	
1	665	4320	6060	-	5760	-	5455	-	5155	-	4826	-	4437	-	3853	-	-	-	-	-	-	-	-	
			15.5	0.70	14.8	0.74	14.2	0.78	13.6	0.82	12.9	0.83	12.1	0.84	10.9	0.82	-	-	-	-	-	-	-	-
	675	4385	6151	-	5855	-	5555	-	5260	-	4939	-	4580	-	4029	-	3199	-	-	-	-	-	-	
			15.8	0.73	15.1	0.78	14.5	0.82	13.9	0.85	13.3	0.87	12.5	0.88	11.3	0.87	10.4	0.81	-	-	-	-	-	-
	685	4450	6242	-	5951	-	5655	-	5364	-	5052	-	4722	-	4203	-	3502	-	-	-	-	-	-	-
16.1			0.77	15.5	0.81	14.9	0.85	14.3	0.89	13.7	0.91	12.9	0.92	11.8	0.91	10.7	0.87	-	-	-	-	-	-	
695	4515	6333	-	6047	-	5754	-	5468	-	5164	-	4840	-	4374	-	3724	-	-	-	-	-	-	-	
		16.4	0.80	15.8	0.85	15.2	0.89	14.7	0.92	14.0	0.95	13.4	0.96	12.3	0.96	11.0	0.92	-	-	-	-	-	-	
705	4580	6424	-	6142	-	5853	-	5571	-	5276	-	4956	-	4521	-	3915	-	-	-	-	-	-	-	
		16.7	0.83	16.2	0.88	15.6	0.92	15.0	0.96	14.4	0.99	13.8	1.00	12.7	1.00	11.5	0.97	-	-	-	-	-	-	
1 1/2	725	4709	6607	-	6332	-	6051	-	5778	-	5498	-	5185	-	4811	-	4280	-	3549	-	-	-	-	-
			17.5	0.91	16.9	0.96	16.3	1.00	15.8	1.04	15.2	1.07	14.6	1.09	13.7	1.09	12.5	1.07	11.6	1.01	-	-	-	-
	740	4807	6743	-	6474	-	6198	-	5931	-	5659	-	5356	-	5025	-	4542	-	3924	-	-	-	-	-
			18.0	0.97	17.4	1.01	16.8	1.06	16.3	1.10	15.7	1.13	15.1	1.15	14.3	1.16	13.2	1.15	12.1	1.11	-	-	-	-
	755	4904	6880	-	6616	-	6346	-	6083	-	5817	-	5526	-	5229	-	4788	-	4210	-	-	-	-	-
			18.6	1.03	18.0	1.08	17.4	1.12	16.8	1.16	16.2	1.20	15.6	1.22	14.9	1.23	13.9	1.23	12.8	1.19	-	-	-	-
	770	5002	7017	-	6758	-	6494	-	6235	-	5975	-	5695	-	5402	-	5007	-	4486	-	3792	-	-	-
19.1			1.09	18.5	1.14	17.9	1.19	17.3	1.23	16.7	1.27	16.1	1.29	15.4	1.30	14.5	1.30	13.4	1.28	12.7	1.22	-	-	
795	5164	7245	-	6994	-	6739	-	6487	-	6236	-	5974	-	5689	-	5367	-	4923	-	4356	-	-	-	
		19.8	1.20	19.2	1.25	18.6	1.30	18.0	1.35	17.4	1.38	16.8	1.41	16.2	1.43	15.4	1.44	14.4	1.43	13.4	1.38	-	-	
810	5262	7381	-	7136	-	6885	-	6637	-	6391	-	6141	-	5860	-	5580	-	5161	-	4639	-	-	-	
		20.0	1.27	19.6	1.32	19.0	1.37	18.4	1.42	17.8	1.46	17.3	1.49	16.7	1.51	16.0	1.52	15.0	1.52	14.1	1.48	-	-	

Performance shown is for installation type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Performance ratings do not include the effects of appurtenances in the airstream.

Centrifugal Fans

LVQ Dynafan

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› Model

HA = LVQ Dynafan

› Unit Size

06	08	10	11	12
13	16	18	24	

› Drive Type

D = Direct Drive B = Belt Drive

› Motor Tap

QC = 1725 RPM	VC = 1550 RPM
RC = 1550 RPM	Q1C = 1650 RPM
SC = 1550 RPM	Q2C = 1725 RPM

› Motor Speed

1 = Single Speed
 2 = 2S2W Single & Three Phase
 3 = 2S1W Three Phase

› Horse Power

1/100	1/50	1/30	1/12	1/6
1/4	1/3	1/2	3/4	1
1 1/2	2	3	5	7 1/2
10	15			

› Enclosure

O = Open Drip Proof
 T = Totally Enclosed
 E = Explosion Proof
 X = Special

› Voltage

A = 110V	G = 230V	N = 440V
B = 115V	H = 240V	P = 460V
C = 120V	J = 277V	Q = 480V
D = 200V	K = 380V	R = 575V
E = 208V	L = 400V	S = 600V
F = 220V	M = 415V	

› Phase

1 = Single 3 = Three

› Cycle

5 = 50 Hz 6 = 60 Hz

› Efficiency

S = Standard H = High Efficiency

› Paint / Coating

0 = None
 F = Epoxy Powder Coat*
 G = Epoxy Powder Coat with UV*
 H = Hi-Temp Powder Coat*
 J = Non-stick Powder Coat*
 K = Phenolic Powder Coat*
 L = Phenolic Powder Coat with UV*
 N = Polyester Powder Coat
 X = Special
 * Not available with choice of color.

› Color

0 = None
 50 = Chrome Green
 53 = Williamsburg Blue
 55 = Pale Green
 56 = Dove Gray
 61 = White
 63 = Oxford Beige
 65 = Dover White
 66 = Desert Tan
 70 = Black
 73 = Smoke Gray
 77 = Brick Red
 79 = Peppercorn
 81 = Pale Brown
 83 = Chocolate Brown
 85 = Timeless Bronze
 94 = Charcoal
 X = Special

› Damper

0 = None
 BDD = Gravity Backdraft Damper
 MD1 = Motor Operated Damper
 110V / 115V / 120V
 MD2 = Motor Operated Damper
 208V / 230V
 MD4 = Motor Operated Damper
 440V / 460V / 480V

› Roof Curb

0 = None	K = UCA18	V = UG18
A = UCG8	L = UG12	W = URA12
B = UCG12	M = SA16	Y = URA18
C = UCG18	N = SFG12	1 = URG12
D = UCA8	P = SFG18	10 = SFA8
E = UCA12	Q = SG16	11 = USCG
F = SFA12	R = SRA16	12 = USCA
G = SFA18	S = SRG16	2 = URG18
H = SCG16	T = UA12	4 = UVA18
J = SCA16	U = UA18	5 = UVG18

› Slope

0 = None
 S = Single
 D = Double

› Metal Liner

0 = None
 L = Metal Liner

› Damper Holding Plate

0 = None
 P = Damper Holding Plate

› Neoprene Gasket

0 = None
 G = Gasket

› No Wooden Nailer

0 = None
 N = No Wooden Nailer

› Curb Paint/Coating

0 = None
 B = Air Dried Epoxy
 Q = Enamel

› Hinged Sub-base

0 = None
 H = Hinged Sub-base

› Galvanized Pedestal

0 = None
 G = Galvanized Pedestal

› Anti-Vandal Collar

0 = None
 C = Anti-Vandal Collar

› Burgler Bars

0 = None
 B = Burgler Bars

› Thermal Overload Protection

0 = None
 P = Thermal Overload Protection

› Disconnect Switch

0 = None
 1 = Nema 1 Disconnect Switch
 3R = Nema 3R Disconnect Switch
 4 = Nema 4 Disconnect Switch
 9 = Nema 9 Disconnect Switch

› Internal Wiring

0 = None
 1 = Nema 1 Internal Wiring
 3R = Nema 3R Internal Wiring

› Transformer

0 = None
 T = Transformer

› Speed Controller

0 = None
 L = Loose
 M = Mounted

› Firestat Switch

0 = None
 F = Firestat Switch

Written specifications on next page.

Engineering Specifications

LVQ Dynafan Centrifugal Fans



Engineering Specifications

Centrifugal Fans

› Belt Drive Fans

Belt driven Centrifugal Roof exhaust fan shall be LVQ Dynafan HA, manufactured by PennBarry, Richardson, TX 75081. The housing shall be weatherproof, utilize heavygauge galvanized construction, and be of vandal resistant design (with field supplied padlock). Fan shall have galvanized base and rigid galvanized steel internal support structures. Housing shall not provide any of the internal structural support. Units shall be equipped with an oversized electrical conduit chase through the curb cap and into the motor compartment for ease of wiring. Units shall be prewired to a junction box mounted in the motor compartment and equipped with an electrical disconnect device.

Statically and dynamically balanced backward inclined, centrifugal wheels shall be aluminum, spark-resistant, and non-overloading, matched to deeply spun venturis. Motors shall be continuous duty, ball bearing design, permanently lubricated, mounted out of the main airstream, and furnished at the specified voltage, phase, and enclosure. Shafts shall be turned, ground, polished, and rust protected. Heavy duty ball bearings are rated for a minimum L50 life exceeding 200,000 hours. Pulleys shall be adjustable, cast iron, machined, keyed, securely attached, and sized for 150% of the horsepower at its rated maximum speed. Each fan shall be UL and CSA listed.

› Direct Drive Fans

Direct drive Centrifugal Roof exhaust fan shall be LVQ Dynafan HA, manufactured by PennBarry, Richardson, TX 75081. The housing shall be weatherproof, utilize heavygauge galvanized construction, include padlock hasp, and be of vandal resistant design (with field supplied padlock). Fan shall have galvanized base and rigid galvanized steel internal support structures. Housing shall not provide any of the internal structural support. Units shall be equipped with an oversized electrical conduit chase through the curb cap and into the motor compartment for ease of wiring. Units shall be pre-wired to a junction box mounted in the motor compartment and equipped with an electrical disconnect device.

Statically and dynamically balanced backward inclined, centrifugal wheels shall be aluminum, spark-resistant, and non-overloading, and matched to deeply spun venturis. Motors shall be continuous duty, permanently lubricated, multi-speed (for applicable models), have thermal overload protection, mounted out of the main airstream, be easily accessible for service, and furnished at the specified voltage, phase and enclosure. Each fan shall be UL and CSA listed.

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1-Year Limited Manufacturer Warranty

› Products Covered

PennBarry Fans and Ventilators (each, a “PennBarry Product”)

› One Year Limited Warranty For PennBarry Products

PennBarry warrants to the original commercial purchaser that the PennBarry Products will be free from defects in material and workmanship for a period of one (1) year from the date of shipment.

› Exclusive Remedy

PennBarry will, at its option, repair or replace (without removal or installation) the affected components of any defective PennBarry Product; repair or replace (without removal or installation) the entire defective PennBarry Product; or refund the invoice price of the PennBarry Product. In all cases, a reasonable time period must be allowed for warranty repairs to be completed.

› What You Must Do

In order to make a claim under these warranties:

- You must be the original commercial purchaser of the PennBarry Product.
- You must promptly notify us, within the warranty period, of any defect and provide us with any substantiation that we may reasonably request.
- The PennBarry Product must have been installed and maintained in accordance with good industry practice and any specific PennBarry recommendations.

› Exclusions

These warranties do not cover defects caused by:

- Improper design or operation of the system into which the PennBarry Product is incorporated.
- Improper installation.
- Accident, abuse or misuse.
- Unreasonable use (including any use for non-commercial purposes, failure to provide reasonable and necessary maintenance as specified by PennBarry, misapplication and operation in excess of stated performance characteristics).
- Components not manufactured by PennBarry.

› Limitations

- In all cases, PennBarry reserves the right to fully satisfy its obligations under the Limited Warranties by refunding the invoice price of the defective PennBarry Product (or, if the PennBarry Product has been discontinued, of the most nearly comparable current product).
- PennBarry reserves the right to furnish a substitute or replacement component or product in the event a PennBarry Product or any component of the product is discontinued or otherwise unavailable.
- PennBarry’s only obligation with respect to components not manufactured by PennBarry shall be to pass through the warranty made by the manufacturer of the defective component.

› General

The foregoing warranties are exclusive and in lieu of all other warranties except that of title, whether written, oral or implied, in fact or in law (including any warranty of merchantability or fitness for a particular purpose).

PennBarry hereby disclaims any liability for special, punitive, indirect, incidental or consequential damages, including without limitation lost profits or revenues, loss of use of equipment, cost of capital, cost of substitute products, facilities or services, downtime, shutdown or slowdown costs.

The remedies of the original commercial purchaser set forth herein are exclusive and the liability of PennBarry with respect to the PennBarry Products, whether in contract, tort, warranty, strict liability or other legal theory shall not exceed the invoice price charged by PennBarry to its customer for the affected PennBarry Product at the time the claim is made.

Inquiries regarding these warranties should be sent to: PennBarry, 1401 North Plano Road, Richardson, TX 75081

Other PennBarry Products

Centrifugal Products



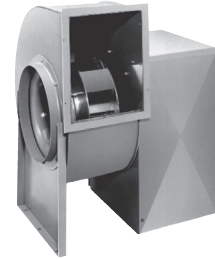
› **Domex**
Centrifugal
Roof Exhausters



› **Fumex Fatrap**
Kitchen Hood Centrifugal
Roof Exhausters



› **Zephyr**
Ceiling and Inline Fans



› **Dynamo**
Centrifugal Blowers



› **Centrex Inliner**
Centrifugal Inline Fan



› **LC Dynafan**
Low Contour Centrifugal
Roof Exhausters

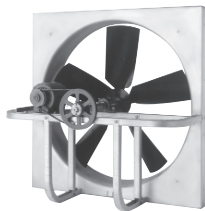


› **ESI**
Efficient Silent
Inline Fan



› **Fume Exhaust**
Curb Mounted
Centrifugal Fans

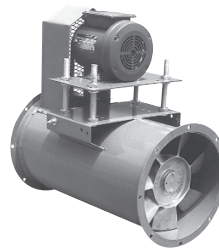
Axial / Gravity Products



› **Breezeway**
Propeller Wall Fan



› **Hi-Ex**
Power Roof Ventilator



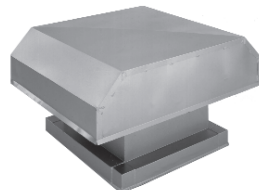
› **Tubeaxial**
Inline Fans



› **Vaneaxial**
Inline Fans



› **Powered Airette**
Axial Roof Ventilators



› **Airette**
Gravity Intake/Relief Hood



› **Domex Axial**
Axial Roof Ventilators



› **Axcentrix**
Bifurcator Fan



PENNBARRY™

For more information, contact your local PennBarry Sales
Manufacturer Representative or visit us at www.PennBarry.com.

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